2015

Identification and Validation of Competencies Expected of the Graduate Programs in Renewable Energy

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Abstract
Summary: At the conclusion of this study, a clear list of 42 content items was identified and statistically ranked. It was found that seven competency items ranked as very important, 30 as important, and five as somewhat important. These results are presented and discussed as a framework in developing or improving existing renewable energy graduate programs.

Disciplines
Agriculture | Bioresource and Agricultural Engineering | Engineering Education

Comments
This abstract is published as Haughery, J.R., Chapman, H., Zargari, A., Joshi, N., "Identification and Validation of Competencies Expected of the Graduate Programs in Renewable Energy," 2015 ATMAE Annual Conference, Pittsburgh, PA. Nov. 11-14, 2015. Posted with permission.

Thursday, November 12, 2015 - 11:30am - 12:15pm

Teaching Innovations (TI)

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Need: Universities and colleges across the United States are striving to keep pace with renewable energy technology and policy. This has fostered an emerging conglomerate of renewable energy degree offerings. There exists, though, a disconnect between renewable energy industry workforce needs and academic program competencies. This is evidenced by an absence of clearly defined curriculum content in many of these renewable energy graduate programs. This can be overcome by new or updated degree programs that have clearly defined program competencies that relate to specific renewable energy knowledge, skills and attributes needed for successful careers in this field.

Overview: The purpose of this presentation is to identify appropriate curriculum competency content for graduate degrees in renewable energy. This proposed content flows from a review of literature from government initiatives, professional society's body of knowledge, and related research studies. Leaders and experts in the field of renewable energy and sustainability were then surveyed to rank each items priority on a 5-point Likert scale.

Major Points:

- List of curriculum competencies identified for renewable energy graduate programs
- Competency items statistically ranked based on expert input from industry
- Analysis of results of statistical rankings

Summary: At the conclusion of this study, a clear list of 42 content items was identified and statistically ranked. It was found that seven competency items ranked as very important, 30 as important, and five as somewhat important. These results are presented and discussed as a framework in developing or improving existing renewable energy graduate programs.